

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:
Thomas S. Neal, et al. § Confirmation No. 1299
Serial No.: 10/800,281 § Group Art Unit: 2629
Filed: March 12, 2004 § Examiner: Ma, Calvin
For: KEYBOARD WITH A SWITCH- § Atty. Docket: 200314054-1
MEMBRANE ASSEMBLY § HPQB:0118
CIRCUIT-NODE SUPPORT
LOCATED IN A CAVITY §

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February 8, 2010 /Christopher R. Rogers/
Date Christopher R. Rogers

**BRIEF IN REPLY TO EXAMINER'S
ANSWER DATED DECEMBER 10, 2009**

This Reply Brief is being filed in response to the Examiner's Answer dated December 10, 2009. As set forth below, the Appellants respectfully reiterate their request for the Board to review and reverse the Examiner's four grounds of rejection. In the previous Office Action, the Examiner rejected independent claims 1, 15, 19, 20, and 24 under 35 U.S.C. § 103(a), as being unpatentable over U.S. Patent No. 6,965,076 to Wu (hereinafter "Wu") in view of U.S. Patent No. 5,615,081 to Ma (hereinafter "Ma").

None of the references cited by the Examiner discloses node supports as set forth in the present specification and recited in the present claims.

Independent claims 1, 15, and 19 recite, *inter alia*, "a node support ... operable to provide physical support ... to ensure contact between the first and second nodes is maintained when the circuit ... generates the signal." Additionally, independent claim 20 recites, *inter alia*, "locating a node support in the second cavity to provide physical

support for the second node to ensure contact between the first and second nodes is maintained when the circuit generates the signal.” Furthermore, independent claim 24 recites, *inter alia*, “physically supporting the bottom node with a node support when the top node contacts the bottom node to ensure contact between the top and bottom nodes is maintained when the signal is generated.”

Furthermore, the present specification clearly describes the intended meaning of the term “node support,” which is described as a novel technique for physically supporting a circuit node inside a keyboard that replaces the flat metal plate that is included in conventional keyboards. *See Application*, p. 4, ll. 1-3. Unlike the metal plate provided in conventional keyboards, embodiments of the node supports described in the present specification project up from the lower enclosure of the keyboard and support each node individually. *See id.* at p. 3, ll. 23-24; p. 5, l. 29 – p. 6, l. 8; Figs. 2-4. Each node support 54 supports a respective circuit node 56. *See id.* at p. 3, l. 23; Fig. 2. The node supports take the place of the metal plate that is typically included in most keyboards, thus making the keyboard less expensive to manufacture. *See id.* at p. 2, ll. 22-28; p. 3, ll. 2-7.

The Appellants contend that at least the claim recitation of a “node support” is not disclosed by any of the references cited by the Examiner. The Examiner’s contention that node supports are disclosed by Ma rests on the Examiner’s overly broad interpretation of those claim elements. As stated by the Examiner, “the node support can be any kind of structural element to support the node of the key element to allow contact to be made when pressure is applied so the circuitry is complete and the generated signal is created.” Examiner’s Answer, p. 17. However, the Examiner’s overly broad interpretation of the term “node support” is contradicted by the present specification, which clearly describes node supports as projecting up from the lower enclosure of the keyboard to support each node individually. *See Application*, p. 3, ll. 23-24; p. 5, l. 29 – p. 6, l. 8; Figs. 2-4.

In rejecting the present claims, the Examiner equated the bottom holding plate disclosed in Wu with the node supports of the present claims. Examiner's Answer, p. 16. However, a node support is not the equivalent of a flat metal plate. Indeed, as noted above and explicitly stated in the present application, the node supports are designed to replace the flat metal plate used in conventional keyboards. *See Application*, p. 4, ll. 1-3. Thus, the Examiner's overly broad interpretation of the term "node support" encompasses the very techniques that the present specification has clearly described as prior art.

During examination, the claims are to be given an interpretation that is reasonable and consistent with the specification. *See In re Prater*, 415 F.2d 1393, 1404-05, 162 U.S.P.Q. 541, 550-51 (C.C.P.A. 1969); *see also In re Morris*, 127 F.3d 1048, 1054-55, 44 U.S.P.Q.2d 1023, 1027-28 (Fed. Cir. 1997); *see also* M.P.E.P. §§ 608.01(o) and 2111. Interpretation of the claims must also be consistent with the interpretation that those skilled in the art would reach. *See In re Cortright*, 165 F.3d 1353, 1359, 49 U.S.P.Q.2d 1464, 1468 (Fed. Cir. 1999); *see also* M.P.E.P. § 2111. It is clear, based on the present specification, that a node support cannot be a flat metal plate, and would not be interpreted as such by a person of ordinary skill in the art.

The Examiner also equated the node supports recited in the present claims with the "switch membrane assembly" of Wu. Examiner's Answer, p. 4. However, the electrical circuitry membrane of Wu is not the same as a node support as defined in the present specification and recited in the present claims. Rather, the electrical circuitry membrane of Wu is the substrate in which the circuit node is formed. In other words, the electrical circuitry membrane of Wu is the very thing that needs to be physically supported, which is accomplished by the bottom holding plate in the keyboard disclosed by Wu. Thus, the circuitry membrane of Wu is not equivalent to a node support, which provides "physical support for the second node to ensure contact between the first and second nodes is maintained when the circuit generates the signal," as generally recited in the present claims.

With regard to dependent claim 16, which depends from independent claim 15, the Examiner equated the node supports with the female connector slot disclosed by Ganthier. Examiner's Answer, p. 12. Dependent claim 16 recites, *inter alia*, "wherein the lower enclosure includes thirteen node supports, each operable to support a respective one of the nodes of the switch membrane assembly." The Examiner contends that the male pins at the bottom of the keyboard module disclosed by Ganthier are the equivalent of nodes. Examiner's Answer, p. 12. The Examiner further contends that the pin sockets of the female connector slot are the equivalent of node supports. *Id.* However, these elements bear no relationship to the structure described in the present application and recited in the present claims. The female connector slot disclosed by Ganthier is merely an electrical connector that enables the keyboard module to be communicatively coupled to the keyboard shell. *See* Ganthier col. 4, ll. 15-17; col. 5, ll. 37-44; Fig. 1. The female connector slot is not described as physically supporting a circuit node of a switch membrane assembly, as recited in independent claim 15. Moreover, the female connector slot is not even located inside the keyboard module where the circuit node of the switch membrane assembly would hypothetically be located. In response to this argument, the Examiner states:

the structure of the support node in [sic] broad enough to read on any type of support elements that allow the nodes to be pressed and circuit contact to be made. Also the claimed limitation of physical node support is broad enough to read on any type of structure that provide support to keyboard structure from below, in which a female connector would be able to snap on to the keyboard module that sit a top it and therefore provide structural support.

Examiner's Answer, p. 18.

However, the female connector slot is not a physical support element at all, and is not described as such in Ganthier. Moreover, even if female connector slot provides incidental physical support to the keyboard module, it certainly does not physically support the circuit nodes of the switch membrane assembly inside the keyboard module. Thus, the pin sockets in the female connector slot are not the equivalent of node supports

that “provide physical support for one or more of the nodes of the switch membrane assembly to ensure contact between the first and second nodes is maintained when the circuit generates the signal,” as recited in independent claim 15, from which claim 16 depends.

Conclusion

The Appellants respectfully submit that all pending claims are in condition for allowance. However, if the Examiner or Board wishes to resolve any other issues by way of a telephone conference, the Examiner or Board is kindly invited to contact the undersigned attorney at the telephone number indicated below.

Respectfully submitted,

Date: February 8, 2010

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